



**PATIENT**

Bowie Lee

**PRESENTING CLINICAL SIGNS**

History: Arrhythmia on exam. Labs: WNL.

**SPECIES**

Feline

**ELECTROCARDIOGRAPHIC FINDINGS**

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 230bpm with an underlying normal sinus rhythm. P for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS is isoelectric. MEA is shifted right. Isolated VPCs are seen throughout; singles only and monomorphic with periods of bi and trigeminy. No supraventricular premature beats, pauses or other dysrhythmias observed. ECG diagnosis: Sinus tachycardia with frequent isolated VPCs.

**BREED**

DSH

**SEX**

Male Neutered

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is irregular yet largely normal in dimension. There is a mildly hyperechoic endocardium consistent with fibrosis. The endocardium also appears remodeled. Remodeled papillary muscles. The left atrium is borderline normal. Trivial MR. The right atrium is normal in size. The right ventricle appears normal. The mitral valve is normal in structure and mobility. Blood flow through both the LVOT and RVOT are normal in velocity. No PI. No AI. No effusions or obvious cardiac tumors identified.

**AGE**

12 years

**CARDIAC CHART**

**WEIGHT**

8.36lbs

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM, DACVIM  
(Cardiology)

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) (Moise, Pipers)	LVIDd (cm) (Moise, Pipers)	LVWd (cm) (Moise, Pipers)	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	3.8	222	0.42	1.2	0.44	70	96
FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Swe) (Abbott)	LA 2D short axis Base view (cm) (Abbott)		LVOT VEL (m/s)	RVOT VEL (m/s)	E max (m/s)
NORMAL	<1.5	<1.3	<1.2		<1.6	<1.3	<0.9
PATIENT	NM	1.2	1.0		1.0	1.1	NM
<p><i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>                      Adapted from June Boon, Veterinary Echocardiography, 1998                      Abbott J &amp; MacLean H JVIM 2006;20: 111-119, Moise et al. Am J Vet Res 47:1476, 1986. Pipers et al. Am J Vet Res 40:882, 1979.</p>							

**IMAGING PERFORMED BY**

Sara Hansen

**HOSPITAL NAME**

West Hills Animal Hospital

**REFERRING VET**

Dr. Cole

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Overtly normal cardiac structure and function. There is LV remodeling and fibrosis, which is likely a normal variant. Serial echocardiography will be necessary to determine progression. Regardless, the LA measures normal indicating low risk for complication. No additional issues are identified.

**INVOICE**

25819

**DATE**

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The ECG shows frequent ventricular premature contractions, coming periodically in a bi and trigeminal pattern. VPCs are generated from abnormal conductive or fibrotic tissue in the ventricles of the heart muscle, and even frequent single VPCs will often cause no clinical signs in



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cats. When sustained however, ventricular tachycardia can lead to symptoms such as lethargy and collapse.

**SPECIES**

Feline

VPCs are a very non-specific finding. They can be due to significant cardiac disease (not present in this study) or be extra-cardiac in origin, i.e., due to pain, stress, inflammation, cancer, GI disease, DIC/sepsis, etc. In this senior cat, all differentials should be ruled out. An abdominal ultrasound to monitor for any underlying abnormalities, in addition to tick titers and cardiac troponin level can be considered. Additionally, a thoracic CT can be considered to screen for masses or abnormalities too small to find easily on echocardiogram. Unfortunately, there is always an elevated risk for collapse and sudden death in any arrhythmic patient, and even on medications this risk unfortunately still persists.

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Based strictly upon the amount of arrhythmia present on the available ECG, anti-arrhythmic therapy could be debated. The difficulty in cats is they are highly sensitive to anti-arrhythmic medications and treating can lead to more issues than not treating. Additionally, holter monitoring cats is not typically an option, and we are left with making our best clinical decision. In this asymptomatic cat, I would not recommend therapy at this time. That being said, close monitoring at home is advised and the owners should be warned of possible complications such as syncope and sudden death.

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Anesthesia is not advised due to ventricular arrhythmias. Sedation using Butorphanol can be considered if needed for further evaluation.

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Lamy, DVM, DACVIM  
(Cardiology)

Monitor for any development of clinical signs at home, including labored breathing, cough or signs of a blood clot (paralysis, neurologic change).

No cardiac medications are clearly indicated.

**PLAN**

Consider systemic evaluation as discussed.

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A recheck ECG and echocardiogram is recommended in 6 months, sooner if any issues arise.

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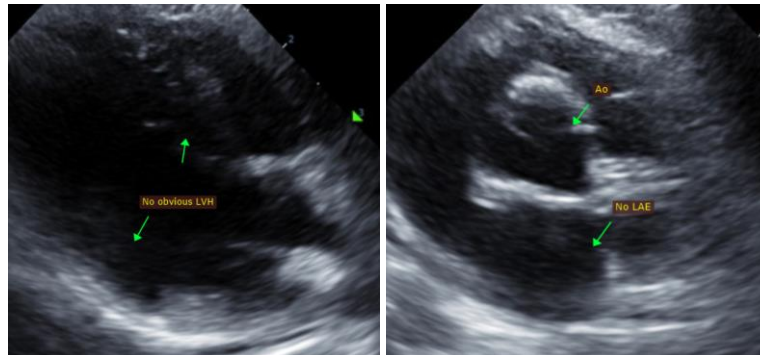
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**IMAGES**



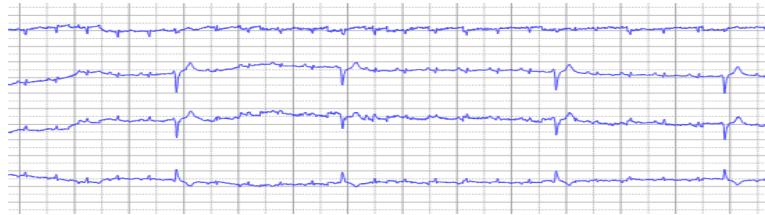


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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

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